

Virginia Energy Plan
Agency Energy Management Activity Report
Fiscal Year 2009

Agency Department of Environmental Quality, Agency 440

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▼ Check here is the above information has changed.

Part I. Core Strategies

Strategy 1.2.1

DEQ's Environmental Management System, which includes the Environmental Policy Statement, EMS Manual, and EMS Implementation Plan, can be viewed at: <http://deqnet/programs/ems>

Strategy 1.2.5

List of energy efficient purchases by DEQ for FY 2009

- ☞ During FY 2009, DEQ purchased \$372,741 of energy efficient products, recycled products, and services, a decrease of \$174,993. This decrease was because DEQ did not purchase any furniture in FY 2009, in FY 2008 DEQ purchased \$186,921 of office and systems furniture made from recycled content.

Strategy 1.3.1

Employee Transportation Coordinator - Jay M. Gutshall

List Transportation Demand Activities undertaken over the past year.

- ☞ DEQ's miles traveled in fiscal year 2009 in state vehicles decreased by 269,035 miles from fiscal year 2008. Miles traveled in FY 2008 were 2,460,362. Miles traveled in FY 2009 were 2,191,327.

Strategy 1.3.2

DEQ participates in the GRTC and the Van Pooling program.

👍	GRTC Participants	49 employees—Subsidized 100% by DEQ
👍	Van Pooling Participants	16 employees—Subsidized up to \$115 per month per employee
👍	Virginia Rail Express	3 employees - Subsidizes up to \$115 per month per employee
👍	Valley Metro Transit employee	2 employees - subsidizes up to \$115 per month per employee

The following represents savings by the two employees by using the Valley Metro Transit to commute to and from work from July 2008 to June 2009:

Miles Not driven:	14,232.7
Gallons of gas not purchased (based on 26 mpg for our vehicles)	547.41
Pounds of CO2 not emitted (based on 19.4 lbs per gallon)	10,619.75
Tons of CO2 not emitted	5.31

Participation remained the same. The Valley Metro Transit participation was added in FY 2009.

Strategy 1.3.4

DEQ held 1216 audio teleconferences using the DEQ “Meet Me” numbers as an alternative to weekly or monthly meetings. This decreases associated travel costs and time, as well as allows for more people to be included in the decision making. In addition, in FY09 DEQ used videoconferencing as a means to provide short training programs or disseminate information to the entire agency. Since videoconferencing allows for an interactive format, employees are able to ask questions and obtain guidance without leaving their office building.

Strategy 1.3.6

DEQ does offer staggered work schedules, and 247 employees out of approximately 819 employees participate in the program. This is an increase of 28 employees from FY 2008. 242 employees telecommute, an increase of 159 employees from FY 2008

Part II. Other Agency Activities

DEQ has energy management coordinators in all 7 regional offices, 2 satellite offices, and on all 13

floors of our central office. The coordinators constantly remind employees to turn off all office equipment and lights at the end of the work. They send out reminders to conserve water, recycle paper products, make two sided copies, and provide information with regards to energy conservation and recycled products available to the Commonwealth.

On going projects relating to pollution prevention are supported by DEQ's Office of Pollution Prevention and the Agency's Environmental Management System (EMS) programs. Visit the DEQ website at www.deq.virginia.gov for information on these specific program activities.

Pollution Prevention Activities for FY 08

Virginia Department of Environmental Quality Renewable and Energy Efficiency Efforts

The Department of Environmental Quality (DEQ) is promoting awareness of renewable energy and energy efficiency by participating in various statewide educational outreach efforts. In FY 2009 DEQ provided support and participated in Try Transit Day; the Association of Energy Conservation Professionals Annual Exposition, and several Earth Day events. Other outreach efforts include on site energy audits to interested VA facilities and promoting pertinent energy projects to facilities participating in the Virginia Environmental Excellence Program (VEEP). DEQ is also a stakeholder in organizations like the Virginia Wind Energy Collaborative and Hampton Roads Clean Cities, promoting wind energy and bio-fuels respectively. The Office of Pollution Prevention (OPP) at DEQ maintains a comprehensive, internet based, educational resource addressing energy efficiency and renewable energy called the Virginia Information Source for Energy (VISE) www.deq.state.va.us/p2/vise/homepage.html. OPP also administrates the Virginia Environmental Excellence Program (VEEP). VEEP is a program that provides industry and municipalities the opportunity to be recognized for their environmental management systems and energy conservation efforts.

OPP is helping to integrate energy conservation into DEQ's environmental management system and meet the requirements of Executive Order 48 'Energy Efficiency in State Government'

P4111 Energy Activities July 1, 2008 – June 30, 2009

July 2008

- Planning committee on 2008 Commonwealth of Virginia Energy and Sustainability Conference (COVES)
- Meeting with DMME to discuss possible collaboration on grant applications
- Attended DEQ Algae Technology meeting to learn about algae as an alternative fuel
- Answered energy related questions on solar power
- Promoted energy conservation and renewable energy at two Virginia Environmental Excellence Program (VEEP) site visits.

August 2008

- Maintained the VISE website
- Participated in VREMS Energy Subgroup conference call meeting
- Answered energy related questions on net metering

September 2008

- Put together and manned Virginia Information Source for Energy (VISE) exhibit at GRTC's "Try Transit Day"
- Attended 2008 Commonwealth of Virginia Energy and Sustainability Conference (COVES)

October 2008

- Presented information about the VISE website at the Virginia EMS Association Conference
- Attended stakeholder meeting for SCC Draft Consumer Education Plan

November 2008

- VISE display at the annual Association of Energy Conservation Professionals Expo at the Roanoke Civic Center. Nearly 70 vendors agencies and NGO's participated in the event, and the final attendance count was over 2000 people.
- Attended webinar "Energy Assessments: What are the Benefits to Small and Medium Facilities"
- Answered energy related questions on ethanol

December 2008

- "Attended" Virtual Energy Forum
- Answered energy related questions geothermal financial incentives and photovoltaic solar power

January – February 2009

- Answered various renewable energy and energy efficiency questions.
- Updated VISE website information on new and extended tax incentives for renewable energy and energy efficiency

March 2009

- Attended Virginia Clean Cities' Propane Fuel Road Show
- Brought VISE exhibit to "Engineering Unplugged" Workshop in Norfolk, VA
- Attended Climate Change Management Tools webinar

April 2009

- Attended Environment Virginia Conference at VMI

- Distributed fact sheets and Energy Saver Handbook at Williamsburg Environmental Fair
- Distributed CFLs, fact sheets, and Energy Saver Handbook at Defense Supply Center Richmond Earth Day
- Attended Virginia Clean Cities' Hydrogen (Fuel Cell) Seminar

May 2009

- Answered questions related to wind energy permitting, energy efficiency tax incentives, biodiesel production, and energy audits
- Attended "Overview of the P2 GHG Calculator and Cost Savings Calculator" webinar

June 2009

- Attended "Climate Leaders: Opportunities for Implementing On-site Wind and Solar Energy to Reduce Your Greenhouse Gas Emissions" webinar
- Answered energy related questions on solar power and micro hydro

Facilities – Environmental Initiatives

Central Office – 629 East Main Street, Richmond

- 1) Central Office has a long-term paper recycling contract with a local vendor to collect all of the agency's waste office paper. For FY 2009, over 14,624 pounds of paper was collected for recycling, this number included white paper, newspaper, card board, office pack, mixed paper, and books. 95 pounds of plastic drink bottles were also collected by this vendor for recycling.
- 2) The Employees Association (EA) provides recycling for the aluminum beverage cans in the office. In FY 2008 the EA collected approximately 484 pounds of aluminum cans, and in FY 2009 it collected 270 pounds. The EA has also promoted the collection of cell phones, rechargeable batteries, ink jet cartridges through vendor mail-back programs.
- 3) Batteries such as cell phone batteries and miscellaneous rechargeable batteries are collected at Central Office for recycling. Employees can bring their batteries from home and place in the bin.
- 4) DEQ collects CFL desk bulbs from our agency and employees may bring their CFL bulbs from home. The bulbs will be shipped as Universal Waste to a vendor for recycling.

- 5) Central Office guidelines encourage double-side copying and printing, with most printers capable of duplexing.
- 6) DEQ has established energy conservation guidelines for all offices, with emphasis on computer and facility lighting systems.
- 7) DEQ has instituted electronic faxing through the use of scanning and computer networks, eliminating the need for free-standing fax machines.
- 8) DEQ continues to work with the landlord on energy conservation and environmental strategies for the building.
- 9) DGS Fleet Management replaced eight high mileage vehicles with eight Honda Civic Hybrids on April 30, 2009 for DEQ.

The use of Filenet was established in 2009. UST and air records have been scanned. Scanning for records for the water media was begun July 1, 2009. Whenever FOIA requests are received, the option of emailing documents or copying document to a CD is considered. In April 2009, 12 requests were received for a review of a large document for a landfill - even though solid waste files had not yet been scanned, admin staff at BRRO Lynchburg scanned the documents and furnished the document on CD to requestors which saved a large amount of copy paper and use of the copier/printer

Blue Ridge Regional Office - Roanoke

WCRO recycles white and mixed paper, plastic drink bottle rings, plastic bags, aluminum cans, glass, batteries (alkaline and rechargeable), cardboard, toners, and paperboard food containers. In 2008 - 2009 the Roanoke office recycled approximately 4.36 tons of paper.

The staff reuses file folders, notebooks, cardboard shipping containers, envelopes and refillable pens to cut down on plastic consumption of new pen housing. WCRO uses out-of-date printed letterhead for use in their fax machines by using the back side to print out faxes and emails.

The staff carpools with other regions to travel to meetings to reduce fuel consumption. Divisions are consolidating field inspections and doing multiple inspections per trip to reduce fuel consumption.

Several staff are commuting to work by bicycle when possible.

WCRO minimizes water use by using water sparingly instead of letting water run continuously when washing hands and dishes.

The landlord has been replacing T12 lights with T8 as needed.

WCRO has been sending out correspondence and copies electronically. As more of WCRO's files are being scanned, documents requested via FOIA are being sent electronically instead of being copied and mailed. Assignments and responses to FOIA's are being made via email to reduce the number of copies to the different media areas. Consultants, permittees, etc., have been submitting documents to us via electronic formats. Staff are encouraged to review documents electronically and print documents double-sided to reduce paper consumption and toner usage.

Blue Ridge Regional Office – Lynchburg

Recycling

Copy/Mixed Paper: (20) 18 gal plastic tubs; (4) 10 gal plastic tubs

Shredded Paper: (5) 30 gal bags

Newspaper: (2) 18 gal plastic tubs

Cans: Aluminum = (1) 15 gal bags **Steel** = (1) 15 gal bags

Plastic: (8) 15 gal bags

Plastic Shopping Bags: bag stuffed with used bags – 5 bags – recycled at grocery store across the street from BRRO, Lynchburg

Toner cartridges: Toner cartridges from the HP 3800 color printers are shipped back for recycling. A shipping label for UPS shipment is enclosed with each new toner cartridge.

Recycling of all materials is handled by volunteers at BRRO-Lynchburg. There are recycling containers across the street from BRRO-Lynchburg that accept most materials. Items not accepted by this facility are transported to another recycling facility.

Green Purchasing and Paper Use

For the period of February 1, 2008 through June 30, 2009, BRRO-Lynchburg has purchased items made from recycled materials including: legal pads, post it notes, copy paper and file folders.

Staff are encouraged to print documents on both sides of the paper whenever practical. Reuse of paper that has already been printed on is not recommended in our leased copier/printers.

File folders and 3 ring binders are reused. Cardboard shipping boxes are reused.

Outdated letterhead paper is used to make recycled paper scratch pads for the office.

Energy Use of Equipment & Lighting, Heating and Cooling

All copiers and printers have energy savers and “go to sleep” when not in use for an extended period of

time.

Staff has been instructed to shut down personal computers at the end of each day.

Some staff – 10% - use the natural light from windows in their offices rather than using fluorescent lighting. Other staff are using lamps and have replaced incandescent bulbs with the CFL bulbs that were provided by Central Office.

Staff who are in offices with windows and blinds open the blinds during periods of sunlight so that they can benefit from the natural heating. Blinds are closed during periods of cold weather to keep heat in, and, kept closed during extreme heat as well to avoid over use of air conditioning.

Transportation/Vehicle Use

The office practices include only using larger vehicles when more than two employees are traveling to the same event. Inspectors and permit writers from different media sometimes ride together to inspections or to investigate complaints. We also carpool with BRRO – Roanoke whenever possible when traveling to training, meetings and conferences.

The office has 3 state vehicles that will accept E85 fuel. .

Southwest Regional Office - Abingdon

Recycle cardboard, paper, newspaper, plastic, aluminum, metal, and printer cartridges.

Estimated Weights:

- Cardboard – 50 lbs
- Paper – 1 ton 2000 lb
- Aluminum – 110 lbs
- Printer Cartridges – 60 cartridges

SWRO prints duplexed copies when applicable and sets a limit for number of copies printed per month for each copier.

SWRO uses Alto Florescent Bulbs which are less toxic and more energy efficient.

File folders, notebooks, inter-agency envelopes, cardboard shipping containers are reused.

Landlord is replacing exit light with LED lighting.

Pen refills are purchased to cut down on plastic consumption of new pen housing whenever possible.

Northern Virginia Regional Office – Woodbridge

Electronic response to FOIA requests: If the information is available electronically, NRO emails files to requestors.

NRO continues to collect and recycle paper (10,925 lbs), plastic, glass, cans (653lbs).

NRO prints doubled sided and use recycled paper for notes.

NRO reuses file folders, notebooks, and cardboard shipping containers.

NRO also recycle binders received from submittals, and make them available free, to consultants when they visit the office and return them to consultants who routinely provide submittals in binders.

Removal of one ballast within light fixtures - *NRO has disabled approximately one out of three light fixtures*

Temperature/thermostat control – balancing HVAC system throughout building to be more efficient.

NRO has implemented an office shut down procedure where thermostats are manually put to “unoccupied” settings (82F in the summer) and appliances that can be are shut down.

NRO encourages individuals to use fluorescent versus incandescent bulbs in the office lamps.

Preliminary figures suggest these steps have reduced electricity consumption between 10% and 25%.”

NRO encourages employees to carpool to and from work and to other offices and meeting.

Weather permitting, some staff are able to bike to work

Office has been equipped with low flow toilets

In fiscal year 2008 the landlord replaced all of the carpet with Shaw eco*worx carpet squares. These carpet squares contain 40% recycled content and have low VOC emissions.

EMS Staff continue to develop a GHG Inventory to identify and calculate the office’s (including FSO) greenhouse gas emissions from energy use, vehicle use, commuting, and waste consumption. After calculating total emissions, the EMS group is working on identifying possible mitigation options to reduce emissions in a cost effective manner that includes programmable thermostats, more energy efficient lighting, change in vehicle use, carpooling, etc.

NRO have developed a plan to complete a rain garden around one of the main storm drainage outlets and are working with DEQ and property owner management to implement it. Annuals have been replaced with perennials in the more “formal” landscaped areas around the entrance area. Landscape crews have been instructed not to do maintenance during code orange days and to restrict visits generally during the summer.

NRO has instituted monthly “vehicle maintenance” events to ensure DEQ vehicles have tires properly inflated and vehicle fluids are within specifications.

NRO continues to identify replacements of thermostats, upgrading of fluorescent lights, and replacement of exit lights with LEDs as the most cost effective way to continue to achieve energy savings over the coming years.

NRO identified the vending machines as significant power users and has replaced them with a system of vending run by and for office personnel. Each program will run the internal vending program for one quarter each.

Piedmont Regional Office (including Air Monitoring Group) – Glen Allen

PRO (and Air Monitoring) recycles corrugated cardboard, white office paper, newspaper, and mixed paper through Weyerhaeuser Company.

PRO uses outdated letterhead in every copier to print documents not being sent to the public and made recycled paper scratch pads for the office. Double sided printing is done whenever possible.

PRO (and Air Monitoring) recycles corrugated cardboard, white office paper, newspaper, and mixed paper through International Paper (9,773 lbs. total in FY09). PRO employees collect #1 and #2 plastics; non-aluminum cans; and miscellaneous paper from the office and add it to their home curbside pick up or drop off at local recycling facilities (approximately 108 lbs.). PRO recycles aluminum cans (183 lbs. 10/10/08).

Toner cartridges and lead acid batteries are recycled through the distributors.

Several PRO employees collect waste coffee grounds, coffee filters and biodegradable food waste from the office and compost these waste products at their homes for use as a soil additive, diverting this material from sanitary landfill disposal (approximately 240 gallons).

Use of the Fax2Mail system which is internet based vs. paper based.

Use of digital photography in the office. Staff store photos on CD's and print pictures only when needed.

Documents requested via FOIA are being sent electronically instead of being copied and mailed. Assignments and responses to FOIA's are being made via email to reduce the number of copies to the different media areas. Consultants, permittees, etc., have been submitting documents to us via electronic formats. Staff are encouraged to review documents electronically and print documents double-sided to reduce paper consumption and toner usage.

We have adopted a highway for trash pick up in Henrico county near Cox and Broad Street.

Purchased double-sided generic public notice signs to place near public meetings. Signs can be reused for each new meeting.

Silverware, and ceramic coffee cups, plates and bowls are available for employees and guests.

PRO resumed the multimedia inspection program, in which about 30 inspections (normally taking two inspectors) were done by one inspector... ergo, 30 fewer trips in the fourth quarter of FY 08. Several programs are consolidating field inspections and doing multiple inspections per trip to reduce fuel consumption.

Four of the eight faucets in the bathrooms are automatic faucets. PRO minimizes water use by using water sparingly instead of letting water run continuously when washing hands and dishes.

PRO's vehicle policy directs the staff to reserve vehicles with better gas mileage first.

PRO practices appropriate vehicle use by only using 4 wheel drive vehicles when necessary, and, by using larger vehicles when more than two employees are traveling to the same event.

Light fixtures with multiple bulbs have had three bulbs in six removed to save energy.

Tidewater Regional Office – Virginia Beach

1) Recycling: Materials and amounts being recycled in TRO:

TRO has a volunteer employee recycling committee who has been coordinating the recycling efforts of the office for years now. They break down the cardboard and collect the recycling bins throughout the office on a regular basis. Without them this program would not be as successful as it has been. Beginning in March 2009 our landlord started a recycling program at our office as well as all of the offices they manage. We no longer pay for a recycling bin to be picked up which is saving us \$22.00/pick up. However, the recycling committee still collects the aluminum cans (they generate revenue to purchase more recycling equipment) and batteries because the recycling firm does not take batteries.

a) Old recycling process provided by DEQ.

1 box of paper = 53 lbs = .046 yd³ (17.5 x 11.5 x 10.75)

Figure 30% loss due to positioning of paper in bin

There would be 10.2 boxes of paper per bin x 70% = 7.15 boxes of paper per
green bin=380 lbs.

The old recycling bin we were paying for was a 6 yd³ bin. Excluding paper there was miscellaneous stuff - 1100 lbs- (plastic bottles, tin, glass and cardboard) per 6 yd³ bin. We had five of these 6 yd³ full bins picked up this year prior to the landlord starting their recycling program. Last year it was determined that this 6 cubic yard bin could hold 760 lbs. of paper. This should equate to about – paper

(5 x 760) + miscellaneous (5 x 110). This equals 3800 + 550 = **4350 lbs.**

New Recycling program provided by Landlord

Recycling company provides figures according to weight on a quarterly basis. Since the inception of the landlord's recycling program, we have recycled 286 pounds/month of recyclables (except aluminum and batteries).

This would equate to 4 months – 4 X 286 = **1144 lbs.**

b) **Batteries (consumer)** = 28 lbs

c) **Aluminum** – the recycling committee continues to drop off our aluminum themselves in order to receive cash to put towards our office events not supported financially by the State.
= 150 lbs

TOTALS

Old Recycling amount	=	4350 lbs - 6/08 - 2/09
New Recycling amount	=	1144 lbs - 3/09 - 6/09
Batteries	=	28 lbs
Aluminum	=	<u>150 lbs</u>
Total excluding aluminum/batteries	=	<u>5672 lbs</u>

The following is a summary of TRO's green report items for FY 09

- 1) Recycling: TRO has a volunteer employee recycling committee who has been coordinating the recycling efforts of the office for years now. They break down the cardboard and collect the recycling bins throughout the office on a regular basis. Without them this program would not be as successful as it has been. Beginning in March 2009, our landlord started a recycling program at our office as well as all of the offices they manage. We no longer pay for a recycling bin to be picked up, which is saving us \$22.00/pick up approximately \$100.00 a year. However, the recycling committee still collects the aluminum cans (they generate revenue to purchase more recycling equipment) and batteries because the recycling firm does not take batteries. For FY 2009 TRO recycled a total of 5672 lbs. of materials, including paper, cardboard, glass, plastic, tin, aluminum, batteries, and compact fluorescent bulbs.

- 2) Waste Minimization
 - a) The staff are encouraged to copy and print double-sided. Use of e-Letterhead is encouraged. Many staff use recycled paper to make notepads or print drafts.
 - b) The office as a whole is relying more heavily on digital media and using the networked scanner/copier/printers to scan items and send them via email rather than paper copy.
 - c) The Fax2Mail system has eliminated our fax machines.
 - d) As a result of these measures, TRO's paper use has dropped 20%.
 - e) TRO still cleans up Greenwich Road on a regular basis. 685 pounds of trash were removed during FY 09.
- 3) Energy Conservation
 - a) We are following agency policy on shutting down computers at night.
 - b) We have set our programmable thermostats to conserve the use of the HVAC system at night and on the weekends and to balance efficiency and comfort during work hours.
 - c) TRO continues to reduce electrical consumption. For FY 2009 (July '08 through June '09) TRO was billed for 360,010 kWh of electricity as opposed to 418,944 kWh in FY 2008. This is a 14% drop. It is unclear, however, how much of the reduction is due to reduction in staff and how much to conservation efforts.
 - d) We encourage the use of CFL bulbs. We also encourage staff to turn off light in rooms not in use and to turn off equipment not in use.
 - e) One of TRO's older pool owned vehicles has been replaced with a hybrid vehicle.
- 4) Water Conservation
 - a) Employees notify the Office Manager of leaks in the sinks and outside faucets immediately in order to get them fixed in a timely manner.
 - b) During drought conditions, our landlord has dealt with water conservation in a very cooperative manner by not watering as often and doing so in the early morning hours with well water and a programmable timer.

Valley Regional Office - Harrisonburg

Recycling; staff recycles news paper, paper, plastics, aluminum, and tin, batteries, toner cartridges.

Food waste is collected in a sealed bucket placed in the break room and then composted by a member of the office staff.

VRO reuses file folders, binders, and scrap paper

All paper products purchased are made of recycled material.

Some programmable thermostats have been installed. As thermostats need to be replaced, the new ones will be programmable. The remainder will be negotiated with the lease negotiation in FY10.

Approximately half of the staff uses just 50% of the overhead fluorescent lighting available in their offices.

Pool vehicles are assigned by office administrative staff to requesting individuals based upon planned travel distances and fuel efficiency of the vehicles available in order to cut down on fuel consumption.

VRO has a sign-up sheet for carpooling on field inspections.

Several staff members car pool, ride bikes, motorcycles or drive energy-efficient vehicles to and from work.

VRO uses scanning, e-mail, and electronic faxing to reduce paper consumption. This includes both receiving and sending documents and reports.

VRO office gatherings require that staff bring their own plates, cups, and utensils.

Respectfully submitted,

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